

Claims

1. Carrier medium (10, 20, 30, 30') for analyzing an analyte, to which biological and/or chemical substances (A through I) are applied in at least two defined regions (11, 21, 31, 31'), with a code (12, 32, 3') showing which biological and/or chemical substance (A through I) is located in which of the defined regions (11, 21, 31, 31').
2. Carrier medium according to Claim 1, characterized in that several hundred biological and/or chemical substances (A through I) are applied in the corresponding number of defined regions (11, 21, 31, 31').
3. Carrier medium according to one of the foregoing claims, characterized in that the biological and/or chemical substances (A through I) are disposed differently in the defined regions (11, 21, 31\*, 31').
4. Carrier medium according to one of the foregoing claims, characterized in that the defined regions (11, 21, 31, 31') are disposed differently on two different carrier media.
5. Carrier medium according to one of the foregoing claims, characterized in that a temperature sensor (17, 37) is provided on carrier medium (10, 20, 30, 30').

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\* Original has "1" – corrected by translator.

6. Carrier medium according to one of the foregoing claims, characterized in that the code (12, 32, 32') is a bar code, a numeric code, or an alphanumeric code or the code (12, 32, 32') is given by the arrangement of the defined regions (21) on carrier medium (20).

7. Carrier medium according to one of the foregoing claims, characterized in that the code (12, 32, 32') provides information for a device (50) reading the carrier medium (10, 20, 30, 30') as to how the device (50) should read which defined region (11, 21, 31, 31').

8. Carrier medium according to one of the foregoing claims, characterized in that the code (12, 32, 32') contains information on the expiration date of the carrier medium (10, 20, 30, 30').

9. Carrier medium according to one of the foregoing claims, characterized in that the code (12, 32, 32') contains information on the storage of carrier medium (10, 20, 30, 30') from the time carrier medium (10, 20, 30, 30') is manufactured until the time it is used.

10. Carrier medium according to one of the foregoing claims, characterized in that the carrier medium (10, 20, 30, 30') consists of a film, a glass carrier, or a paper.

11. Carrier medium according to one of the foregoing claims, characterized in that DNA, RNA, proteins or antibodies are used as the biological and/or chemical substances (A through I).

12. Method for manufacturing carrier media according to one of Claims 1 to 11, with the following steps:

- a. producing a set of identical carrier media (30) having a first arrangement of the defined regions (31) and/or a first arrangement of the biological and/or chemical substances (A through I) within the defined regions (31),

- b. assigning a different code (32) to each of these carrier media (30),
  - c. storing the arrangement of the defined regions (31) and/or the arrangement of the biological and/or chemical substances (A through I) within the defined regions (31) of the carrier media (30) along with the associated code (32),
  - d. selecting a second arrangement of the defined regions (31), and/or of the biological and/or chemical substances (A through I) in the defined regions (31), that is different from the first arrangement,
  - e. implementing steps a through c for the second arrangement,
  - f. implementing steps a through c for subsequent arrangements different from the arrangements already used.
13. Method according to Claim 12, characterized in that the code (12, 32, 32') represents a simple numbering of carrier medium (10, 30, 30').

14. Method according to Claim 12 or 13, characterized in that the biological and/or chemical substances (A through I) are printed with a print head analogous to that used in an ink jet printing process on the defined regions (11, 21, 31, 31') of carrier medium (10, 20, 30, 30').

15. Method according to one of Claims 12 to 14, characterized in that a set consists of approximately 1,000 to 10,000 carrier media (30, 30').

16. Method according to one of Claims 12 to 15, characterized in that several hundred sets are manufactured.

17. Method according to one of Claims 12 to 15, characterized in that one carrier medium each is selected from different sets and these selected carrier media are packed together.

18. Method according to one of Claims 12 to 17, characterized in that several sets of carrier media are mixed and the carrier media are randomly selected for inclusion in a common pack.

19. Device for reading a carrier medium according to one of Claims 1 to 11 with at least one optical detector per defined region (31) on the carrier medium (30), wherein the optical detectors detect the reactions of the biological and/or chemical substances (A through I) in the defined regions (31) on the analyte as signals as soon as the carrier medium (30) has been brought into a read position relative to device (50)\*.

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\* There is no "characterized in that" in this claim. Translator.

20. Device according to Claim 19, characterized in that means for acquiring and transmitting the code (32) to a an administrative center are provided.

21. Device according to one of Claims 19 or 20, characterized in that the optical detector is a semiconductor chip.

22. Device according to one of Claims 19 to 21, characterized in that means for digitizing the detected signals are provided.

23. Device according to one of Claims 19 or 20, characterized in that means for transmitting the detected signals to the administrative center are provided.

24. Method for reading a carrier medium according to one of Claims 1 to 11 with a device for reading a carrier medium according to one of Claims 19 to 23 with the following steps:

- a. applying the analyte to the carrier medium (30),
- b. moving the carrier medium (30) into the read position relative to the device (50) for reading the carrier medium (30),

- c. transmitting the code (32) of the carrier medium (30) to an administrative center,
  - d. within the administrative center, evaluating the code (32) and determining the associated arrangement.
25. Method according to Claim 24, characterized in that evaluation of the code (32) and determination of the associated arrangement within the administrative center are performed by the administrative center at no cost and a fee is charged only if an analyte has reacted positively to one of the biological and/or chemical substances (A through I).
26. Method according to one of Claims 24 or 25, characterized in that instructions are transmitted from the administrative center to the reading device (50) as to how the optical detectors are to be set for the individual defined regions (31).
27. Method according to one of Claims 24 or 26, characterized in that as step e the reactions of the defined regions (31) are detected with the optimally set optical detectors.
28. Method according to Claim 27, characterized in that the detected signals are transmitted to the administrative center as step f.

29. Method according to Claim 28, characterized in that, as step g, the arrangement of the biological and/or chemical substances (A to I) of the carrier medium (30) and/or the evaluation of the detected signals is/are transmitted from the administrative center to the device (50) for reading.

30. Method according to one of Claims 24 to 26, characterized in that, according to step b first the reactions of the defined regions (31) are detected with the optical detectors of device (50) and in step c additionally the detected signals are transmitted to the administrative center.

31. Method according to Claim 30, characterized in that, as step e, the arrangement of the biological and/or chemical substances (A through I) of the carrier medium (30) and/or the evaluation of the detected signals are transmitted from the administrative center to the device (50).

32. Method according to one of Claims 24 to 31, characterized in that instructions are transmitted by the administrative center to reset certain defined regions (31) according to the detected signals.

33. Method according to one of Claims 24 to 32, characterized in that the request is sent by the administrative center, in response to certain detected signals, to read another carrier medium having biological and/or chemical substances different from the biological and/or chemical substances on the first carrier medium after application of the analyte.

34. Method according to one of Claims 24 to 33, characterized in that the detected signals and the code (32) for transmittal from the device (50) to the administrative center is keyed with a public key.

35. Method according to one of Claims 24 to 34, characterized in that the transmission of the detected signals and the code (32) to the administrative center is error-protection-coded.